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MATERIAL FOR THE TEACHING OF SPELLING

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Ayres was the pioneer who showed the fewness of the words which do the business of written communication, when he published his list of one thousand words, which with their repetitions constitute more than nine-tenths of the material of personal and business letters. An excellent number of the *Teachers College Bulletin*¹ now sets forth the second and third thousand most frequently used words, with a careful study of them, and sixteen very useful spelling scales.

A natural conclusion from such careful investigations as these is that the lists compiled furnish in themselves a suitable material for the teaching of spelling in our schools. To quote the *Teachers College Bulletin* referred to, "It is believed that the words presented in the following lists are of sufficiently frequent occurrence, and therefore of importance, to warrant their use as a basic list for teaching, after the Ayres one thousand have been mastered." "What words should a pupil know how to spell?" asks the compilers of a recent spelling book. "The common sense answer is: He should know how to spell the words that he needs to write as a child, or that he will need to write as an adult. How may we know what these words are? By finding out the words that both children and adults use in their writing."

Clearly, free access to dictionaries always granted, the pupil should know how to spell the words he needs to write, whether as child or adult; but to say that all these words, even if they were discoverable, should be taught him is quite another matter. Let any educated adult consider how he learned to spell the thousands of words which were never taught him, and he will appreciate the fact that a great deal of the acquisition of the correct form of words

¹ Twelfth Series, No. 19, May 21, 1921.

is achieved by the way, or to use a much abused word, incidentally. Street signs, newspaper headlines, magazines, the school paper, advertisements of all kinds, and today the movies, are constantly flashing upon the schoolboy's attention the correct forms of common words. To say that because *the, and, of, to, I, in, that, you, and for* are the commonest words in English, they should therefore be the words most emphatically taught, is to ignore the normal child's use of his senses out of school. Theoretically the fact of a word's commonness is a reason, not for teaching it, but for allowing it to teach itself; for the words of greatest frequency have, *ipso facto*, a greater chance of becoming fixed in the ordinary course of a child's activities than those of lesser frequency.

All this takes for granted that we can find out what the three thousand or four thousand commonest words are. Ayres was of the opinion that beyond the fifty commonest words "with progressively decreasing reliability the list may be extended to include the 500 commonest words and possibly the 1,000 commonest, but not the 2,000 commonest, for long before this point is reached the identity of the frequently used words varies according to the subject under consideration." Jones estimated the writing vocabulary of second-grade children at 1,927 words, and the total vocabularies in the higher grades range between 20,000 and 30,000 words, some of which are constantly being called up into the writing vocabulary by the necessities of wide spontaneous composition. The nature of the subject discussed decides the vocabulary.

It would appear from a study of "the second and third thousand most frequently used words" as published by the *Teachers College Bulletin No. 19* that the frequencies are not sufficiently reliable. From records of words misspelled kept for many years I chose almost haphazard two hundred which appeared to be reasonably frequent, none of which occur either in Ayres' list or in the *Bulletin* list, and hence would appear to be beyond the pale of the three thousand commonest words. For purposes of comparison I chose one hundred words from the *Bulletin* list which from records of misspelling would appear to be infrequent. The two lists are given below.

LIST I

200 WORDS NOT INFREQUENTLY MISSPELLED, NONE OF WHICH APPEAR IN
AYRES OR THE BULLETIN LIST

| | | |
|------------|-------------|------------|
| acquire | civilized | faint |
| advice | cleanse | fare |
| afterwards | cloud | flies |
| agreeable | collapse | football |
| allies | companies | forehead |
| allowed | comparison | foreigner |
| aloud | compass | fourteen |
| amateur | compel | ghost |
| ammunition | completely | glimpse |
| amusement | compliment | glorious |
| angle | conceive | grief |
| applause | conquer | grocer |
| aren't | conscience | hadn't |
| ascend | conscious | handsome |
| athlete | couldn't | happiness |
| attractive | courageous | haven't |
| audience | criticized | hero |
| awkward | dealt | heroes |
| balance | deceit | innocent |
| balloon | deceive | it's |
| barbarous | definite | leisure |
| bargain | democracy | lieutenant |
| baseball | delicious | lightning |
| behavior | dependent | losing |
| bicycle | despair | management |
| border | despise | manual |
| borne | difficult | married |
| brake | discipline | mattress |
| bury | disobedient | messenger |
| busily | dissolve | mosquito |
| cannon | divine | mosquitoes |
| can't | doesn't | movable |
| caution | dropped | murmur |
| cautious | dying | necessity |
| ceiling | eighteen | nephew |
| cereal | embarrass | nickel |
| chimney | endurance | niece |
| choose | enemy | nineteen |
| chosen | excel | ninety |
| cigarette | expanse | obedient |

| | | |
|------------|------------|-------------|
| odor | reins | summary |
| origin | repel | swear |
| oyster | repetition | syllable |
| pail | resemble | syrup |
| parallel | rhyme | taught |
| parcel | robin | telegraph |
| pencil | safety | tenant |
| perch | sailor | tennis |
| persevere | sandwich | thief |
| photograph | saucer | thousand |
| pierce | scent | tired |
| pistol | science | tobacco |
| plane | scissors | toilet |
| potato | scrape | tomatoes |
| potatoes | shadow | tough |
| pray | shepherd | troops |
| precede | shield | tying |
| preferred | shone | unnecessary |
| prey | siege | using |
| profession | sleigh | valleys |
| profit | socks | villain |
| prophecy | source | wages |
| prophesy | studying | waiter |
| puncture | submarine | welfare |
| pursuit | substitute | won't |
| radiator | succeed | yours |
| razor | suitable | |

LIST II

100 WORDS INCLUDED IN THE BULLETIN LIST OF THE SECOND AND THIRD
THOUSAND MOST FREQUENTLY USED WORDS.

| | | |
|----------------|----------------|------------------|
| administrative | canine | debris |
| alias | catastrophe | decentralization |
| alimony | chancellor | duped |
| ambuscade | chautauqua | electrolier |
| anther | chef | elimination |
| appropriating | cholera | embassies |
| aspirations | conferees | engravers |
| avalanche | congested | extradition |
| bigamy | congratulatory | filial |
| boosted | congressional | fracture |
| budget | contusions | franchise |
| cafeteria | debauch | fraternal |

| | | |
|------------------|----------------|---------------|
| frontage | parachute | seance |
| furry | paradoxical | sectional |
| gallantry | philosopher | sex |
| grilling | phrenologist | simultaneous |
| ha | pistil | smuggle |
| hybrid | pollen | soliciting |
| hypnotize | portiere | spinal |
| immorality | precedents | spiritualism |
| imperial | presentation | spiritualist |
| injunction | probate | strictness |
| interlocutory | prohibitory | subsidy |
| jackies | registration | successor |
| jurisdiction | reorganization | suspending |
| justification | rite | suspension |
| larceny | roofer | tableaux |
| lava | rurales | tavern |
| misappropriating | sachem | tomahawk |
| misdemeanor | sanity | toppled |
| municipal | scrutinizing | troupe |
| notoriety | sealskin | unprecedented |
| nucleus | seamstress | unsuspecting |
| papal | | |

A casual glance at the two lists will convince the reader that on the whole List I contains the commoner words. As corroborative of this judgment I compared each list with the list of 1,254 words most frequently used by children and adults in writing, compiled by Tidyman from the lists of Jones, Smith, Cook and O'Shea, Chancellor, Ayres, and others. Seventeen of List I occur in this list of 1,254, but none of List II occurs.

Fortunately the value of the *Bulletin* list is not affected by the fact that the two thousand words presented cannot fairly be called the second and third thousand most frequently used words. The list was derived by combining Eldridge's Six Thousand Common Words with lists 1, 2, and 3 of Cook and O'Shea, with an elimination of all of the Ayres thousand. Cook and O'Shea investigated the writing vocabularies of thirteen persons, eight women and five men, of the average age of thirty-four. About four-fifths of the material came from five of the thirteen. Both these lists and that of Eldridge were made before the Great War: consequently it is noticeable that many words brought into common use since 1914 are absent

from both the Ayres thousand and the *Bulletin* two thousand. One cannot conceive of extensive and intelligent correspondence written during the last seven years which contained none of the following words. They are additional to other words made common by the war already presented in List I, such as *allies*, *submarine*, etc.

LIST III

WORDS NOT FOUND IN AYRES OR THE BULLETIN LIST, BUT SOME OF THEM LIKELY
TO OCCUR IN CORRESPONDENCE WHICH COVERED THE
PERIOD OF THE GREAT WAR

| | | |
|-------------|-----------|------------|
| alien | fatigue | monoplane |
| alliance | fearful | mystery |
| anarchist | fiend | neutrality |
| aviation | fireproof | occupation |
| belligerent | fortify | ocean |
| besiege | frighten | outrage |
| biplane | frontier | outrageous |
| blockade | fugitive | pacify |
| bomb | furious | partition |
| boundary | garrison | patriotism |
| bugle | grieve | plague |
| bullet | guarantee | poison |
| cable | hangar | powder |
| cathedral | heaven | prevent |
| cereal | heroine | prisoner |
| collision | hideous | providence |
| commerce | honorable | rebel |
| cripple | horror | religion |
| cruise | humane | retreat |
| czar | hunger | revenge |
| declaration | interpret | revolution |
| defend | invalid | righteous |
| democratic | invention | rifle |
| disgrace | knight | saddle |
| dreadful | loyal | savage |
| drum | marshal | settlement |
| emperor | martial | shriek |
| enemies | massacre | shudder |
| enlist | mercy | soil |
| enthusiasm | mighty | sorrow |
| exhausted | miserable | sovereign |
| explosion | misery | spade |
| export | modify | spy |

| | | |
|-----------|----------------|-------------|
| starve | torpedo | uncivilized |
| stubborn | traitor | unite |
| stupid | transportation | vegetation |
| surrender | trap | victory |
| target | treaty | warrior |
| terror | triumph | weapon |
| threaten | troop | wicked |
| tiger | typhoid | wretched |
| tiresome | | |

Six words in this list occur in Tidyman's 1,254 commonest words.

It would further be strange if the vocabulary of thirteen persons, eight of them women, and averaging thirty-four years of age, were particularly rich in the terms common among students, and relating to school interests. Besides a number of words like *amateur*, *athlete*, *baseball*, *bicycle*, *nickel*, *sandwich*, *science*, near to the school-boy's activities and already mentioned in List I, the following words are noticeable as absent from the three thousand commonest words as recorded by Ayres and the *Bulletin* list.

LIST IV

SOME WORDS OF FREQUENT USE IN SCHOOLS, BUT NOT OCCURRING IN
AYRES OR BULLETIN LIST

| | | |
|-------------|----------|------------|
| academy | expel | satchel |
| algebra | fierce | scout |
| bulletin | grammar | skate |
| canoe | ignorant | sled |
| chocolate | knife | soda |
| compete | kodak | suitcase |
| composition | lemon | swim |
| contest | memorize | tardy |
| coward | mischief | tournament |
| crayon | pennant | trophy |
| dime | pitcher | trousers |
| dive | racket | umpire |
| electricity | review | vanilla |
| enroll | ruler | zero |
| erase | | |

Perhaps a more serious objection to several of the published lists of words arranged according to frequency is that they are constructed directly or indirectly upon a dictionary basis. Cook

and O'Shea observed this method in the construction of their lists, though the object of the lists was to discover "the spelling needs of American children." "The justification for such procedure," they add, "is first, that it simplifies the problem; and second, that an individual who has any real use for a root word will doubtless have also a real use for its inflected forms." The problem is indeed greatly simplified; yet that in itself can hardly be urged as a justification. But does an adult's need of an inflected form present any evidence that a child can spell it? Again in the compilation of his thousand commonest words Ayres recognized the possibility that the child's spelling needs might not become apparent in the process of reducing words to a dictionary basis, but might lurk in the inflected form. But he excludes plurals and verb forms "presenting no characteristic spelling difficulties beyond those inherent in the singular or infinitive." But this is to argue in a circle. The investigator's object is to discover the child's "spelling needs"; but he excludes certain words on the arbitrary assumption of the very knowledge he sets out to gain. In the present state of our knowledge no one can say with exactness what plurals and verb forms present spelling difficulties to a child of a given age. But we do know that in the derivatives which Cook and O'Shea ignored lodges a large part of the difficulty which students experience in learning to spell. The very useful investigation upon the subject of spelling reported in *School Document 17* of the Boston School Board, which attempted to answer the question "Does a child's ability to spell a certain word help him to spell the derivatives of that word?" proved in the minds of the investigators that derived words are more difficult than root words for the child to spell. The greater difficulty was further traced to the added letter or letters. Thus in the three words *salaries*, *beginner*, *principally*, the majority of mistakes were made in the ending. Ayres' list prints none of these words, but the root form of all three. A study of the misspellings made in College Board Entrance Examinations in English, extending over nine years, shows that almost exactly 25 per cent of the errors are errors in derivatives. Hence a list of words presented as material for spelling which reduces derivatives to their root form, ignores one of the chief sources of misspelling.

How far does the *Bulletin* list, which together with the Ayres thousand presumably presents the three thousand words of greatest frequency, afford material for the most economical teaching of spelling in secondary schools? It seemed of interest and value to compare the list of words misspelled in the College Board examinations in English with this list of the three thousand words of most frequent occurrence. A study of the words misspelled in compositions on topics relating to their own experience written by 2,964 candidates who took examinations in the years 1913-1921 inclusive, shows that 775 words cover just about 75 per cent of the total mass of misspelling. These 775 words we may call the untaught residuum—the core and heart of the material to be taught in our secondary schools. How many of these words are included in the 3,000 words of greatest frequency?

I wished to learn not only the total number of words common to the list of the 775 words most frequently misspelled and the 3,000 words most frequently used, but also how the number of the 775 occurring in the first 1,000 according to frequency, compared with the number occurring in the second and the third 1,000 according to frequency. I therefore separated the 3,000 words of most frequent occurrence into three lists.

1. Ayres' thousand commonest words.

2. The thousand of the *Bulletin* list whose calculated frequencies are the highest.

3. The remaining thousand of the *Bulletin* list. (This included all frequencies of 3.50 per 100,000 running words and below, and all frequencies of 3.63 as far as the word *serving*.)

The results of the comparison are given in Table I.

TABLE I

NUMBER AND PERCENTAGE OF THE 775 WORDS MOST FREQUENTLY MISSPELLED BY 2,964 CANDIDATES FOR THE COLLEGE BOARD ENTRANCE EXAMINATIONS IN ENGLISH, WHICH OCCUR IN THE 1,000 MOST FREQUENTLY USED WORDS, THE SECOND THOUSAND MOST FREQUENTLY USED WORDS, AND THE THIRD THOUSAND MOST FREQUENTLY USED WORDS, ACCORDING TO AYRES AND THE BULLETIN LIST.

| | First 1,000 | Second 1,000 | Third 1,000 |
|---|-------------|--------------|-------------|
| Number of the 775 words which occur . . . | 153 | 117 | 79 |
| Percentage of the 775 words which occur . . . | 19.7 | 15.1 | 10.2 |

Thus 426 out of the 775 words, or 55 per cent do not occur in the list of the three thousand words which is presented as basic spelling material. The conclusion is obvious that lists of spelling material drawn up solely on the basis of frequency of occurrence do not necessarily present material for the most efficient and economical teaching of spelling. If space allowed, this conclusion could be confirmed by a study of the correlations existing between lists of words most frequently misspelled and lists of words drawn up according to frequency of occurrence.

What then is the logical material for the most efficient and time-saving teaching of spelling? Clearly the correct form of the commonest words must become automatic; though again it should be said that this does not imply that a teacher need spend valuable time in the impression of forms which are being constantly intruded upon the pupil's consciousness outside the schoolhouse walls. Beyond these words, material derived, not according to the frequency of the use of the word in the vocabulary of adults, but according to frequency of the misspelling in the writing of children of various ages will aid in effecting that economy in the teaching of spelling for which all teachers sigh. Spelling is a correct habit, not a body of knowledge. If we can teach the student habits of accuracy in the writing of words he needs *now*, and the habit of using the dictionary in cases of doubt, we have taught him to spell.

Fortunately the value of the admirable study made available in *Teachers College Bulletin No. 19* is untouched by anything that has been said in regard to the material presented, and it affords us the best standardized tests of spelling ability in the secondary schools yet published.